

**REMARKS**

Claims 1-6 are all the claims pending in the application.

Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

Applicant thanks the Examiner for accepting the drawings filed in September 27, 2001.

Applicant also thanks the Examiner for initialing the references listed on form PTO-1449 submitted with the Information Disclosure Statement filed on September 27, 2001.

**I. Specification**

The Examiner objects to the specification by asserting that the title of the invention is not descriptive. Applicant hereby amends the title in a manner believed to overcome this objection. Accordingly, Applicant respectfully requests that the objection be withdrawn.

**II. Claim Rejections under 35 U.S.C. § 103(a)**

Claims 1-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakamoto (U.S. Patent No. 5,532,531) in view of Hoffman (U.S. Patent No. 3,671,841). Applicant respectfully traverses this rejection on the following basis.

Claim 1 defines a novel combination of features which forms a stepping motor. Included among the features of this new motor is an output shaft gear formed in an output shaft of a rotor, wherein the output shaft gear is connected to a gear to be driven of a member to be driven.

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Applicant submits that the claimed combination, including at least this feature, is neither taught nor suggested by the Sakamoto in view of Hoffman.

The Examiner recognizes that Sakamoto does not disclose an output shaft gear formed in an output shaft of the rotor, and connected to a gear to be driven of a member to be driven. To cure this deficiency, the Examiner relies on Hoffman and asserts that Hoffman teaches such a feature. Applicant respectfully disagrees.

While Hoffman discloses an output shaft gear (75) formed in an output shaft of the rotor, Hoffman makes absolutely no mention of a gear to be driven which is connected to the output shaft gear (75), as set forth in claim 1. As Hoffman is silent regarding a gear to be driven connected to the output shaft gear (75), Hoffman also clearly does not teach the feature of a member to be driven, as is also set forth in claim 1. Indeed, the Examiner has not pointed to any elements or passages in Hoffman which address these claimed features.

In addition, claim 1 sets forth that the number of teeth for the output shaft gear is set to a predetermined ratio with respect to the number of magnetically stable points per rotation of the rotor, in order to hold the member to be driven in a reference position when a coil is electrified by a regulated electrification pattern. The Examiner asserts that Hoffman teaches such a feature. Again, Applicant respectfully disagrees.

Contrary to the assertion of the Examiner, Hoffman is completely silent regarding the number of teeth on the output shaft gear (75). As Hoffman does not address the number of teeth on the output shaft gear (75), it is clear that Hoffman does not teach a specific relationship between the number of teeth on the output shaft gear and the number of magnetically stable

points per rotation of the rotor, as is required by claim 1. Indeed, Applicant respectfully submits that Hoffman fails to even remotely suggest such a feature. Further, Sakamoto fails to cure these deficiencies of Hoffman.

Accordingly, as the combination of Sakamoto and Hoffman fails to teach or suggest all of the features of claim 1, Applicant respectfully submits that a prima facie case of obviousness has not been established and respectfully requests that the Examiner reconsider and withdraw the rejection. If the Examiner persists in this rejection, Applicant respectfully requests that the Examiner particularly point out the structure and passages in the cited prior art which correspond to the above discussed features.

Claims 2-6 depend from claim 1 and therefore incorporate all of the limitations thereof. Accordingly, Applicant submits that claims 2-6 are patentable at least by virtue of their dependency.

In addition, claim 2 sets forth an equation which is utilized to obtain the number of magnetically stable points per rotation of the rotor. The Examiner asserts that the equation in claim 2 is merely a manipulation of numbers (i.e., converting one set of numbers into another set of numbers) and, therefore, does not constitute statutory subject matter. Applicant respectfully disagrees.

Contrary to the assertion of the Examiner, the equation set forth in claim 2 is not simply a manipulation of numbers which converts one set of numbers into another set of numbers. Rather, claim 2 sets forth an equation which generates the number of magnetically stable points

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per rotation by utilizing the number of claws of a stator core iron, the number of poles of the stator core iron and the number of phases of the stator core iron.

Clearly, such an equation cannot be viewed simply as a conversion between one set of numbers a another set of numbers, as suggested by the Examiner. Rather, the equation produces a useful, concrete, and tangible result (i.e., the number of magnetically stable points per rotation by one electrification pattern) and, therefore, constitutes patentable subject matter. See MPEP § 2106 (IV)(B)(2)(b)(ii). Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection.


### **III. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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